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MUSEUM OF COMPARATIVE ZOOLOGY CAMBRIDGE MASS.

THE

West American Scientist.

AN ILLUSTRATED MONTHLY MAGAZINE
FOR REFERENCE AND STUDY.

Sm

July, 1893.

C. R. Orcutt, Editor and Publisher.

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Price 10 cents. *$1.00 a year.*

PRIZES ON PATENTS.

HOW TO GET TWENTY-FIVE HUNDRED DOLLARS FOR NOTHING.

The Winner has a Clear Gift of a Small Fortune, and the Losers Have Patents that may Bring them in Still More.

Would you like to make twenty-five hundred dollars? If you would, read carefully what follows and you may see a way to do it.

The Press Claims Company devotes much attention to patents. It has handled thousands of applications for inventions, but it would like to handle thousands more. There is plenty of inventive talent at large in this country, needing nothing but encouragement to produce practical results. That encouragement the Press Claims Company proposes to give.

NOT SO HARD AS IT SEEMS.

A patent strikes most people as an appallingly formidable thing. The idea is that an inventor must be a natural genius, like Edison or Bell; that he must devote years to delving in complicated mechanical problems and that he must spend a fortune on delicate experiments before he can get a new device to a patentable degree of perfection. This delusion the company desires to dispel. It desires to get into the head of the public a clear comprehension of the fact that it is not the great, complex, and expensive inventions that bring the best returns to their authors, but the little, simple, and cheap ones—the things that seem so absurdly trivial that the average citizen would feel somewhat ashamed of bringing them to the attention of the Patent Office.

Edison says that the profits he has received from the patents on all his marvelous inventions have not been sufficient to pay the cost of his experiments. But the man who conceived the idea of fastening a bit of rubber cord to a child s ball, so that it would come back to the hand when thrown, made a fortune out of his scheme. The modern sewing-machine is a miracle of ingenuity—the product of the toil of hundreds of busy brains through a hundred and fifty years, but the whole brilliant result rests upon the simple device of putting the eye of the needle at the point instead of at the other end.

THE LITTLE THINGS THE MOST VALUABLE.

Comparatively few people regard themselves as inventors, but almost everybody has been struck, at one time or another, with ideas that seemed calculated to reduce some of the little frictions of life. Usually such ideas are dismissed without further thought.

"Why don't the railroad company make its car windows so that they can be slid up and down without breaking the passengers' backs?" exclaims the traveler. "If I were running the road I would make them in such a way."

"What was the man that made this saucepan thinking of?" grumbles the cook. "He never had to work over a stove, or he would have known how it ought to have been fixed."

"Hang such a collar button!" growls the man who is late for breakfast. "If I were in the business I'd make buttons that would'nt slip out, or break off, or gouge out the back of my neck."

And then the various sufferers forget about their grievances and begin to think of something else. If they would sit down at the next convenient opportunity, put their ideas about car windows, saucepans, and collar buttons into practical shape, and then apply for patents, they might find themselves as independently wealthy as the man who invented the iron umbrella ring, or the one who patented the fifteen puzzle.

A TEMPTING OFFER.

To induce people to keep track of their bright ideas and see what there is in them, the Press Claims Company has resolved to offer a prize.

To the person who submits to it the simplest and most promising invention, from a commercial point of view, the company will give twenty-five hundred dollars in cash, in addition to refunding the fees for securing the patent.

It will also advertise the invention free of charge.

This offer is subject to the following conditions:

Every competitor must obtain a patent for his invention through the company. He must first apply for a preliminary search, the cost of which will be five dollars Should this search show his invention to be unpatentable, he can withdraw without further expense. Otherwise he will be expected to complete his application and take out a patent in the regular way. The total expense, including Government and Bureau fees, will be seventy dollars. For this, whether he secures the prize or not, the inventor will have a patent that ought to be a valuable property to him. The prize will be awarded by a jury consisting of three reputable patent attorneys of Washington. Intending competitors should fill out the following blank, and forward it with their application:

"————, ——, 1893.

"I submit the within described invention in competition for the Twenty-five hundred Dollar Prize offered by the Press Claims Company.

"————."

NO BLANKS IN THIS COMPETITION.

This is a competition of rather an unusual nature. It is common to offer prizes for the best story, or picture, or architectural plan, all the competitors risking the loss of their labor and the successful one merely selling his for the

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THE WEST AMERICAN SCIENTIST

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HEMAN CHANDLER ORCUTT.

HEMAN CHANDLER ORCUTT was born in Monson, Mass., the ninth of September, 1825. Early in life he removed with his father's family to Woodstock—and later to Hartland, Vermont, where his youth and prime of life were passed in a typical New England farm life. On the first day of the year 1852 he married Miss Eliza Eastin Gray, the daughter of Dr. Joseph Gray, then of Woodstock, Vermont, and they became the parents of five sons, three dying in early childhood.

In 1864 he enlisted in Company C, Sixth Brigade, Vermont Volunteers, and served in the Union ranks until the close of the Civil War, participating in Cedar Creek battle.

The love of nature was a prominent trait in his character, and he devoted much time to the wild flowers of Vermont, and cultivating as many useful and beautiful plants as he could maintain. The rural and horticultural literature of those days also received careful perusal and was occasionally enriched by his pen; while his wife contributed to the leading literary journals under the simple signature, "E.E."

On the last day of 1878 he left the Green Mountain State, with his wife and two sons, John Heman Orcutt and the writer, arriving in San Diego, California, the 18th of January, 1879. The transition from the snow clad hills of Vermont to the perennial summers of California was thoroughly appreciated, and many disadvantages resulting from changed surroundings were borne with patience. He was naturally a strong man, of active temperament, with an inventive, investigating mind. While his New England farm life inclined him to agricultural pursuits, yet an inherent mechanical taste led him into the building profession for a time.

In August, 1879, with C. K. Smith, my father and I took the

first of a long series of excursions together, visiting the Cuyamaca mountains east of San Diego, Buckman's Soda Springs, Campo, and other points of interest. The same species of brakes that grew in the Vermont woods and many familiar plants greeted us in these mountains, but among the things of greatest interest to my father were the wide spreading live oaks bearing their immense acorns, the great sugar pines—measuring 7 ft. in diameter at a man's hight from the ground, the huge solid cones of Coulter's pine, the mistletoe, and countless other things unknown to Vermont woods which nature offered for our inspection.

In the small collection of dried plants made on this first trip were specimens of the then unknown plant, Cordylanthus Nevinianus—later collected by the Rev. J.C.Nevin, of Los Angeles.

In April, 1882, the late Dr. C. C. Parry, C. G. Pringle and the writer visited Todos Santos bay, Baja California, discovering many new things on the not uneventful trip. In the following June my father and I made a shorter trip together to the Guadalupe valley, Baja California, where, in climbing one of the mountain slopes, we found a small variegated flower, which Dr. Parry soon after named Gilia Orcuttii.

In August and September my father and family, with a few friends, made a camping trip into the Cuyamaca mountains, where the pure mountain water and odor of pine trees were thoroughly enjoyed by all.

October found us together on another botanical excursion in the mountains of Baja California. Our trip was successful in the securing of seeds and plants of the new Agave Pringlei, for which the trip was specially planned. We also collected seeds of the pinyone pine (Pinus Parryana) and gathered many interesting plants, among them a new Dalea with pretty purple flowers, later named by Prof. Watson, D. Orcuttii. Nolina Palmeri and Quercus Palmeri, Q. Emoryi and Q. pungens (Q. turbinella) were also collected; the brilliant flowers of Lœselias carpeted the forest glades, and the autumn flora was resplendent with beauty.

In January, 1883, a party consisting of Dr. and Mrs. Parry, W. G. Wright, Miss Rosa Smith (now Mrs. C. H. Eigenmann), my father and me, visited Todos Santos bay together, the main object being the collection of a stock of roots of the new Mexican rose (Rosa minutifolia), discovered the previous spring. Many

other plants also were collected, including a new Spice bush (Ptelea aptera).

In February Dr. and Mrs. Parry, Miss Smith, with my father and brother, with his wife, visited Table mountain, south of San Diego, the trip resulting in the discovery of Tetracoccus—a new Euphorbiaceous shrub.

May 28th we journeyed to the Guadalupe valley, collecting seed of Lathyrus splendens, and finding Echinocactus Orcuttii in Valle de los Palmas. About a month later, H. C. Orcutt and family started on a camping trip to the falls of San Diego river, where a delightful time was spent. Another month found my father and me again in the mountains of Lower California. The following extracts from my diary will perhaps prove of interest in connection with this brief narrative of my father's life.

July 25, 1883. Thursday. A slight shower at 4:30 A. M.; one team and a horseman pass our camp; father kills a young rattle-snake and a curious cotton-tail rabbit; pass Adam's ranch where they were making "cheese" at 16c. and 35c. per lb.; Quercus pungens [fide Engelmann] 20 ft. high and over a foot in diameter; get water at Japa in the morning; find water again at 11 A. M.; reach "Campo Seco" (dry camp), and from there ride in a heavy shower to Topo (dirt), where a deserted cabin gives us excellent quarters; thunder storm at dusk; visit an Indian camp in the evening; buy of them a couple of hats, zapatos or shoes, mescal rope and fiber.

"The zapatos are made from mescal fiber, obtained by rotting the leaves of agaves. They are merely rude sandals, fastened to the foot by thongs of the same material. One hat made of palm-leaf. A platter seems to be made of Juncus robustus, and had been in use as a meat platter. [These articles now form part of the U. S. National Museum.]

"We taste roasted mescal leaves and also of a cake made by the Indians by grinding the pods of the mesquite tree; nutritious, of a rather peppery, sickish sweet taste; Indians call themselves La Costa, or the coast Indians."

A few days later found us on the Catalina mountain, at Hanson ranch, where we found Lupinus Orcuttii, Astragalus Sonoræ and a new Lœselia. On our return trip we stopped at Campo Seco, leaving our team in care of a Scotch miner, and

with an Indian for guide we descended into the famous canyon Cantilles, where we found thousands of palm trees and many plants of interest.

In the canyon we met our first Cocopa Indians and partook of their mesquite bread. A few further extracts from my diary are here given:

"July 31, 1883. * * * Return up the canyon and camp near water. Undress and recline on palm leaves with palm leaves for a covering; excessively warm; brought no blankets with us and need none.

"August 1, 1883. * * * Collect Lobelia splendens, flowers of Erythea armata, Palmerella debilis, etc. Indians use the leaves of Washingtonia filifera for thongs, but apparently not those of Erythea armata. Our Indian guide gathered the palm seed with poles made by splicing together the flower stalks of agaves."

The spring of 1884 was exceedingly wet, and the roads out of San Diego were well nigh impassable in every direction. Not until the 30th of June did we again start on an excursion into Baja California. We passed over much the same route as the year before, but made more exhaustive collections and revisited the Cantilles canyon. In September we again traversed the road to Hanson's and returned by San Rafæl and Ensenada, going as far south as San Vicente, where poor roads and a scarcity of feed compelled our return. In 1885 the last of these excursions together was taken. Much of the same ground was gone over, but owing to drought the results were meager.

In the spring of 1888, H. C. Orcutt bought a few acres in the Mission Valley, near the ruins of the San Diego mission, and returned to a horticultural life, planting fruit trees and experimenting with numberless plants and flowers. Two years later a post-office which bears his name was established in the new community, and in March, 1890, he received his commission as the first postmaster.

An attack of la grippe in the winter of 1890 resulted in heart trouble from which he never fully recovered. On June 30, 1892, an accession to the disease was brought on by a sudden cold, after which he lived just four weeks, meanwhile consulting four physicians and having kept the house scarcely a week. Just

after dining with his family and guests, on the 28th of July, in response to a remark made by Mrs. L. M. Smith, a sister of his wife, he said: "I am not afraid to die." And these were his last words. Thus he passed away as he had always wished in the full possession of his faculties. The funeral took place from the late residence, Dr. W. B. Noble officiating, with interment in Mt. Hope cemetery, San Diego.

Always an active man, thinking of others, even those who had no claim upon him, he won esteem in whatever community he resided. His love of nature and liberality secured to him many friends, and the work he did for the natural sciences and the encouragement he gave to the study still lives, and gives an impetus which quietly but surely will aid in its progress during uncounted years to come.

C. R. ORCUTT.

THE FLOWERS HE BROUGHT.

DEDICATED TO MY HUSBAND.

The music of the rippling brooks,
And all the sweetness caught,
From tarrying in wooded nooks,
Came with the flowers he brought.

The morning light of May was there
With all its beauty fraught,
And love, a tender bud, and fair,
Came with the flowers he brought.

Its presence lighted up the room,
And hallowed every thought,
And to my heart a richer bloom
Came with the flowers he brought.

SAN DIEGO, 1888. E. E. ORCUTT.

ON AN APPARENTLY MICROLEPIDOPTEROUS LEAF-MINER OF THE VINE.

BY C. H. TYLER TOWNSEND.

On June 3, 1891, I found, in a vineyard near Las Cruces, N. Mex., a leaf-miner in a leaf of the vine. The leaf containing the miner was one of the older ones, among the first to be put forth in the spring. The tortuous channel of the miner inside could be plainly seen, with the latter in an enlarged area at the end of the channel near the edge of the leaf. The following description is drawn from this specimen. This miner seems to belong to the microlepidoptera. It bears quite a striking resemblance to a leaf-miner of Populus angustifolia,* from the Canyada Alamosa, N. Mex.

Later, on June 10, 1891, a considerable number of leaves were found infested with this miner in a vineyard in Mesilla. Examination showed the miners to be pupæ, still enclosed in the mines of the leaves. An attempt to breed them ended without satisfactory results, and they were unfortunately destroyed.

LARVAL MINER (apparently full grown).—Length, 3½ mm.; width of anterior segments, 3-5 mm. White; lines and faint anterior shading of head, pale yellowish brown. Fleshy; apodous, consisting of thirteen segments including head. Elongate; wider anteriorly on first three segments, slightly tapering posteriously on last three. Body bare, not even microscopically pubescent. Head tapering anteriorly, quite deeply emarginate on posterior border, its posterior portion and segments 2 and 3 about equal in width; 4 to 10 distinctly narrower and about equal in width, or 10 slightly narrowing; 11 to 13 gradually narrowed from 10, 13 about one-half the width of 10; 2 to 5 and 12 about equal in length, or 4 slightly longer; 6 to 11 and 13 very considerably longer and nearly equal in length; 4 to 11, especially the more anterior ones, quite rounded in outline, their sutures ebing more deeply incised. Head quite triangular in outline from above, the tapered anterior portion bearing a sucker-like or labella-like mouth organ, which appears like a cap or transverse enlargement attached by a neck-like constriction to the anterior

* See article "On a seemingly microlepidopterous leaf-miner of the narrow-leafed cottonwood," Can. Ent. 1893.

part of head. Sucker compactly clothed on its whole outer and anterior surface with microscopic hair-like spines, central portion of sucker blackish anteriorly; no jaws or other trophi apparent, but such are probably concealed within the sucker-like capsule, thus explaining the blackish central appearance of the latter anteriorly. Two diverging pairs of lines run backward from this sucker, on the dorsum of head, the two lines of each pair having a common origin and being also divergent. A round blackish dot at origin of each pair. The inner line of each pair extends farthest posteriorly, the outer line being curved inward towards the other at its extremity. Antennæ situated on anterior dorsal edge of head just posterior to sucker-like organ, consisting of three joints; two basal joints stout, nearly equal in length and thickness, geniculate; the terminal or third joint minute, tooth-like, and with a similar shorter joint just inside it at its base, also arising from the second joint. Ventral surface of head also showing the two diverging pairs of lines, themselves diverging, and with the outer one of each pair terminally curved inward, but the inner lines are shorter than the outer ones. A short transverse suture or line jnst posterior to antenna on side of head, running to outer one of the two pairs of longitudinal lines. This short transverse line also shows on dorsal surface of head, and is apparently only a suture.

Described from one specimen, Mesilla valley, N. Mex.

G. W. LICHTENTHALER.

Mr. G. W. Lichtenthaler, one of the most earnest, energetic, and eminent of American concologists, died in San Francisco Feb. 20th. For twenty years he has done nothing but travel and collect, and his vast collection embraces 6,000 or 8,000 species of shells, 1,000 species of marine algæ, and 500 species of ferns, besides many thousands of duplicates. This entire collection he bequeathed to the Illinois Wesleyan University at Bloomington, Ill., the city which has been his home for the most of his life. In addition to this valuable collection he bequeathed $500 to put it in suitable shape for preservation. This gives the Illinois Wesleyan University one of the most valuable conchological collections of the country. The ferns and algæ are from every part of the world, and the ferns have a complete collection of those of the Sandwich Islands, and nearly a complete collection of those of North America. The entire collection will be arranged as speedily as possible, and will be accessible to all students of the subject, as well as to others.

CALIFORNIA YELLOW BELLS.

It seems strange that one of the loveliest of California annuals should have escaped attention among lovers of flowers for so long. And yet the Yellow Bells of California, as it is called, is hardly yet introduced. The plant forms a broad bush, from a span to occasionally two feet high. Each of its numerous branches is fairly loaded with broadly bell-shaped pendulous flowers, a half inch long, and of a delicate cream color. The flowers are almost everlasting, the persistent corolla drying and retaining its shape until the seed has ripened. "The general effect of a branch is suggestive of a long spike of the lily of the valley," says one writer regarding it.

The pinnatifid foliage has caused the plant occasionally to be taken for a fern, before it blossoms. It occurs in Utah, and from Lake County to San Diego, and southward in Lower California. It belongs to the same family as the phacelia, nemophila and whitlavia of our gardens—all natives of the Golden State.

C. R. ORCUTT.

EMMENANTHE PENDULIFLORA.

HERBERT OSBORN.

Herbert Osborn is one of the youngest of those who have attained distinction in the field of economic entomology. He was born on a farm in Walworth county, Wisconsin, March 19, 1856, and resided there until 1863, when, with his parents he removed to Fairfax, Iowa, where he continued to reside until he began his college studies. His time was occupied in attending the schools of Fairfax, working at the carpenter's trade and as drug clerk until 1870. About this time his father became interested in the nursery business and for five years Herbert assisted him.

His attention was early called to the different species of birds he found near his home, many of which he carefully stuffed and mounted, at the same time he pursued the study systematically. Here, also, he found many insects which he collected and observed, arranging and classifying them. The importance and fascination of the latter branch became so manifest that he soon counted it paramount to the other departments of natural history and devoted his attention almost wholly to it; he has, however, kept up a lively interest in allied sciences.

During the winters of 1875–8 he taught in the public schools near Fairfax—the beginning of a very successful career—and, having decided to devote his life to professional studies, in 1876 he entered Iowa Agricultural College, graduating therefrom in 1879 with the degree of B. Sc. He was immediately elected first assistant in zoology and entomology, and instructor in physiology at the college, soon after becoming full professor of zoology, entomology and geology, and curator of the zoological museum.

In the winter of 1881–2 he took a special course of study at the Museum of Comparative Zoology, Cambridge, Mass., under the learned Dr. H. A. Hagen, he having previously studied under Professors Bessey and Beal. After completing his past graduate studies he received the degree of M. Sc. from his alma mater, about the same time being elected Fellow of A. A. A. S., and president of its entomological club for two years (1884–5).

The following year he attended the College of Physicians and Surgeons, at Des Moines, Iowa, and while there delivered a course of lectures on "Parasites and Parasitic Diseases." The reorganization of the Iowa Academy of Science is due to the labors of Prof. Osborn, its first president. About three years ago he was elected to membership in the Societe Entomologique de France, and Entomological Society of Washington.

Prof. Osborn's career as an economic entomologist dates from the spring of 1878, since when he has been a member of the entomological committee of the Iowa Horticultural Society, furnishing reports each year. These appeared in the society's transactions, and are able, creditable articles, most of them being illustrated by his own pencil. He has furnished papers on "Parasites" and injurious insects, for the various state publications and agricultural papers, and as special agent of the U. S. Department of Agriculture, has published valuable reports and treatises in its Reports, one especially valuable, covering, as it does, new ground, entitled "Pediculi and Mallophaga Affecting Domestic Animals."

As a systematic entomologist Prof. Osborn has not been idle. His published papers on the Aphididæ, Thripidæ, Phytoptidæ, Pediculidæ and Mallophaga easily place him among our best systematic workers.

For some time Prof. Osborn has been entomological editor of the Orange Judd Farmer, in the columns of which he is, by his close contact with the tillers of the soil, performing valuable labor in teaching the members of that class how to successfully combat their tiny but relentless insect foes.

Prof. Osborn was married to Miss Dora Sayles, January 19, 1883, their family consisting of two bright, interesting boys.

Prof. Osborn's careful preliminary training, his thoroughly honest work, his high official position, together with his talents and enviable reputation, point to future distinction of which his admirers can only conceive.

F. W. GODING.

GEORGE VASEY.

Dr. George Vasey, the head of the botanical division of the United States Department of Agriculture, died in Washington after an illness of only three days. Dr. Vasey was born in England on the 28th day of February, 1822, and was brought by his parents to this country when a year old. The family settled in New York, where the boy was educated in the common schools and then studied medicine, graduating from the School of Medicine in 1848. He practiced his profession in Illinois for twenty years, and from 1870 to 1872 was in charge of the Museum of the Illinois Natural History Society. In his early years he must have paid considerable attention to botany, for in 1874 he was appointed botanist in the Department of Agriculture, a position which he held continuously until his death. For many years Dr. Vasey has devoted especial study to the Grasses, and a number of important papers on this family of plants from his pen have been published by the government of the United States. Among these may be mentioned the Grasses of the South, Grasses of the Arid Region, The Agricultural Grasses and Forage Plants in the United States. In 1876 Dr. Vasey published a useful catalogue of the Forest Trees of the United States, explanatory of the collections of North American wood specimens exhibited by the government at the Centennial Exhibition in Philadelphia. Under his active administration Dr. Vasey has seen the national herbarium enlarged from a modest beginning to its present size, and through his activity and energy become one of the greatest collections of North American plants. His death will be felt by a multitude of correspondents to whom he was uniformly kind, obliging and helpful.

THE Sampson well, Waco, Texas, is 1,850 feet deep, and flows about 1,500,000 gallons daily of perfectly pure water, at a temperature of 103 degrees—the highest temperature of any artesian water yet discovered.

FRUITS ALL THE YEAR ROUND

A POPULAR AND PRACTICAL SYNOPSIS OF TEMPERATE AND EXTRA-TROPICAL FRUITS.

(COPYRIGHTED, 1891, BY C. R. ORCUTT).

THIS SYNOPSIS OF FRUITS has been prepared at the suggestion of a practical student of horticulture whose extensive intercourse with other horticulturists has led him to appreciate the demand for information concerning the many varieties of fruits available to the grower in Southern California.

Many varieties—doubtless some worthy ones—have been omitted, but it is hoped that the work may prove useful for its conciseness for reference.

Corrections, of omissions or otherwise, are invited.

PART I.

ACANTHOSICYOS (Cucurbitaceæ).

A. HORRIDA. Shrub, bearing fruit of the size and color of oranges, of a pleasant acidulous taste; not hardy.

ACHRAS (Sapotaceæ).

A. SAPOTA. Sapodilla, or West Indian plum; a handsome evergreen tree, producing delicions fruit.

ÆGLE (Rutaceæ).

Æ. MARMELOS. The elephant apple, or Bengal Quince: fruit resembles an orange, of delicious flavor and exquisite fragrance; in Ceylon a perfume is prepared from the rind.

ALGAROBA—see Ceratonia siliqua.

ALLIGATOR PEAR—see Persea gratissima.

ALMOND—see Prunus amygdalus.

AMELANCHIER (Rosaceæ).

A. CANADENSIS. Juneberry, or service-berry; a shrub or small tree, producing globular purplish sweet fruit. Numerous varieties occur in a wild state, some being grown extensively for the fruit.

DWARF JUNEBERRY. Hardy ornamental shrub, with glossy dark green leaves, in habit and size similar to a currant bush; fruit possesses a rich sub-acid flavor, and excellent for dessert or for canning.

ANANAS—see Ananassa.

ANACARDIUM (Anacardiaceæ).

A. OCCIDENTALE. CASHEW-NUT. The Cashew-tree bears an edible fruit from which hangs the smooth and curiously-shaped nut. The kernel is very palatable, while the surrounding skin is bitter and astringent. Cashew-nuts are brought from the West Indies, and may, perhaps, thrive in Southern California.

ANANASSA (Bromeliaceæ).

A. SATIVA. The pine-apple; virtually a tropical plant, not standing any

frost. Can be grown with profit in a few localities around San Diego, California (R. R. Morrison), and in Mexico its culture yields upwards of $600.00 an acre. Highly valued as a decorative plant, and the leaves yield a very fine, silky fiber, used in the manufacture of pina cloth. This cloth is very delicate, soft, transparent, and is made into various articles of dress. Brazil. The following are the best cultivated varieties:

Egyptian Queen. Very showy; of fine flavor; most prolific, maturing earlier and more surely than any other variety. Flavor something like that of a wild strawberry.

Red Spanish. The leading variety of commerce; ruddy yellow when ripe, with a sparkling sub-acid flavor.

Sugar Loaf. Sweet and delicious flavor; delicate flesh; shape tall and conical.

ANONA (Anonaceæ).

The custard apples are beautiful and delicious fruit, becoming more popular and worthy of more extensive trial in California than they have yet received: deciduous trees or shrubs; tropical; order ANONACEÆ.

A. CHERIMOLIA. Cherimoya, or Jamaica apple: fruit the size of a large apple, pale greenish yellow tinged with purple, weighing from 3 to 4 pounds each: native of Peru, where it is said to attain a weight of 16 lb! Flesh is sweet, of the consistency of a custard, with thin skin. Trees in Santa Barbara bear yearly: will stand quite a frost.

A. GLABRA. The Pond apple, or wild custard apple of Florida; handsome and fragrant fruit of the size of an apple; ornamental; thrives in any soil. Florida.

A. MURICATA. Sour-sop: fruit often weighs over two pounds; pulp white, acrid, not disagreeable. West Indies.

A. RETICULATA. Common West Indian custard apple, with yellowish pulp. Not so highly prized for food as some of the other species. In Brazil known as CONDISSA.

A. SQUAMOSA. Sugar apple or sweet-sop; a delicious fruit; in shape resembling an inverted pine cone; yellowish green, ovate, the thick rind inclosing the luscious pulp. The acrid seeds, when reduced to a powder, are used an an insecticide. An ornamental bush. Malay Islands.

APPLE—see Pyrus malus.

APPLE, LOVE—see Tomato.

APRICOT—see Prunus armeniaca.

APRICOT PLUM—see Prunus Simoni.

ARACHIS (Leguminosæ).

A. HYPOGÆA Linne. No description of the common peanut is necessary, but there are occasionally new varieties introduced worthy of some attention as, for instance, the so-called Spanish peanut, although raised in Virginia. The kernels are rounder and more delicate than those of the common variety, consequently more highly esteemed by confectioners; but the habitual "peanut eaters" like the others best. Cuba peanuts are occasionally seen in our markets, and they are three or four times as

large as the home-grown, and of a reddish color, supposed to be due to the reddish soil in which they are grown.

Araucaria (Coniferæ).

A noble genus of evergreen trees. The majority of species are not hardy.

A. Bidwillii. The bunya-bunya pine; seeds large and edible. A. Braziliensis and A. imbricata also produce large edible seeds.

Arctostaphylos (Ericaceæ).

The Manzanitas are beautiful evergreen shrubs, mainly peculiar to California and Mexico. The name manzanita is the diminutive of manzana (Spanish for apple) and commonly applied to all the species, but belongs more especially to A. manzanita. The name is also applied to Arbutus menziesii at times—a member of the same family, and all first cousins to the trailing arbutus, or mayflower of New England. More than a dozen species occur in California.

A. manzanita Parry. A shrub (or rarely, a small tree) common from Oregon to Mexico. The small berries are edible, of a pleasant acid, and eaten by Indians and wild animals. The unripe fruit is said to make an excellent jelly, while an excellent quality of vinegar can be made from the ripe fruit. This is one of the earliest of our flowering shrubs, the white bell-like flowers appearing in clusters even before snow ceases to fall in our mountains. The shrub is of irregular growth, with exfoliating, reddish bark. The roots attain immense size, with dark, rich colored wood.

A. uva-ursi Spreng. The bearberry; a low, prostrate shrub, producing red berries which are credited with medicinal virtues. More northern in habitat.

Aristotelia (Tiliaceæ).

A. macqui L'Heritier. A shrub bearing small berries, largely consumed in Chili, having a pleasant taste of bilberries.

Artocarpus (Urticaceæ).

A. incisa. One of the most beautiful trees; about forty feet high; indigenous to Africa, but naturalized in the West Indies. The dark green, deeply-incised leaves ten by twelve inches in size. The fruit round, six to ten inches in diameter, is picked before fully ripe, then baked as a sweet potato, the rind removed and eaten with a knife and fork. The bread-fruit has a flavor much like dough mixed with eggs and lightly sweetened, and is seedless. A variety with seeds is also grown, but only the seeds are edible, when roasted having the flavor of chestnuts.

Atalantia (Rutaceæ).

A. glauca J. Hooker. The desert lemon of New South Wales and Queensland; recommended for trial on arid lands, and as likely to improve under cultivation.

Averrhoa (Geraniaceæ).

A. bilimbi L. Fruit available for tarts, etc. A native of India.

A. carambola L. A small tree found in India; two varieties, one with

sweet and the other with acrid fruit. The sweet variety is available for the table raw, the other useful for preserves.

AVOCADO—see Persea gratissima.

BANANA—see Musa sapientum.

BANANA, CHINESE—see Musa Cavendishii.

BANANA, DWARF—see Musa Cavendishii.

BARBERRY—see Berberis.

BEAR-BERRY—see Arctostaphylos.

BERBERRY—see Berberis.

BERGAMOT—see Citrus aurantium.

BENINCASA.

B. CERIFERA Savi. An annual, bearing a large edible gourd. Native of India, China, Polynesia and the Philippines.

BERBERIS (Berberidaceæ).

The barberries are handsome evergreen shrubs, bearing an edible, acidulous fruit, useful for preserves, and in some varieties credited with medicinal virtues. The bark dyes a fine yellow. Many species worthy of cultivation, among them the following native to California (except B. vulgaris):

B. AQUILIFOLIUM. False Oregon grape. West American. Round, acid fruit, fine for tarts and pies.

B. NERVOSA. A larger fruit, roundish, sour, indigenous to California, and fine for cooking.

B. PINNATA. The Mexican LENYA AMARILLA; a fruit a third of an inch in diameter and pleasant to the taste. San Francisco, Cal., southward.

B. VULGARIS. The most commonly cultivated barberry.

BIVA—see Eriobotrya japonica.

BLACKBERRY—see Rubus fruticosus.

BORASSUS (Palmaceæ).

B. ÆTHIOPICUS Martius. A gigantic African palm, sometimes even 37 feet in circumference, with leaves 12 feet across. The sap forms a kind of palm wine. The edible part of the fruit is yellow, stringy, and of a fruity flavor.

B. FLABELLIFORMIS Linne. Enormous quantities of sugar are produced in India from the sap of this noble palm, which attains a hight of 100 feet and an age of more than 200 years. The pulp of the fruit serves for food.

BRABEJUM.

B. STELLATIFOLIUM Linne. A South African shrub, bearing nuts, edible after roasting.

BREADFRUIT—see Artocarpus.

CAROB—see Ceratonia siliqua.

CARYA (Juglandaceæ).

Trees with hard and tough wood, including the hickory, shagbark walnut, pecan, etc. C. ALBA is a tall and handsome tree, producing the delicious shell-bark hickory nuts. C. AMARA is a graceful tree bearing an intensely bitter nut with a thin shell.

Carya (Juglandaceæ)—Continued.

C. alba Nuttall. Shell-bark or shagbark hickory; a tall and handsome tree, yielding the main supply of hickory nuts. Canada, southward.

C. amara Nuttall. Bitternut or swamp hickory; kernel intensely bitter.

C. glabra Torrey. Pig-nut or brown hickory; bearing a sweetish or bitter, small nut.

C. microcarpus Nuttall. Balsam hickory; a fine, lofty North American tree, 80 feet high, bearing small but pleasant-tasting nuts.

C. olivæformis. The pecan; a slender tree, bearing deliciously flavored nuts; occurs wild from Illinois, southward. A lofty, handsome tree, growing 70 feet in hight, with a straight trunk; of very rapid growth.

C. sulcata Nuttall. Nut of sweet, pleasant taste. Pennsylvania to Kentucky. Thick shell-bark hickory.

TO BE CONTINUED.

A BEAUTIFUL MEMORIAL.

The botanical museum of Harvard University, Cambridge, Massachusetts, is being enriched by a beautiful series of models of flowers, intended to represent the leading genera in all the families of plants. The foliage and flowers are represented life size and in natural colors, while characteristic generic details are given on an enlarged scale, such as a section of ovary or fruit, the style, or stamens or general structure of the flower. An average of six pieces are thus made to represent each species included in the series. These models are constructed wholly of blown glass, thus being nearly indestructible, the mineral colors entering into the composition of the glass with few exceptions.

They are the work of Leopold Blaschka and his son, Rudolf Blaschka, of Dresden, Germany, renowned for their accurate models of jelly fish and other marine life. They are the only gentlemen who are skilled in the delicate art which they have mastered. The Blaschkas are to devote ten years to the work. The series was presented to Harvard University by Mrs. Charles E. Ware and Miss Mary L. Ware, of Boston, in memoriam of the husband and father, Dr. Charles E. Ware. Nearly four years have already been devoted to the work, and from eighty to one hundred models represent a year's labor. American plants are given preference in the series

Mr. Rudolf Blaschka came to America in January, 1892, and visited Jamaica, and also, in company with Mr. Wm. F. Ganong of Harvard University, visited the Pacific Coast, spending a few days in Arizona and Southern California in April and May, and returning through Utah, Colorado and across the great plains, collecting such typical plants as were needed and making preparatory sketches from nature. He visited the Alleghanies before returning to Dresden.

The models already completed have been uniformly commented upon favorably by botanists, and at a short distance are indistinguishible from the living plants even to critical eyes.

Editorial.

THE sixty-fifth issue of the WEST AMERICAN SCIENTIST appears after more than a year of silence. The failure of a prominent bank in San Diego, contemporary with failures abroad; explorations which called the editor to the plains of the Colorado desert; the death of a man who had been both father and comrade to the writer of these lines; and the formation of closer ties in marriage, are all incidents which have occurred since the close of our last volume.

The work postponed month by month is at last resumed, just as another financial crisis is reached in the nation's history. The temporary closing of national and state banks marks a critical period, but the hope is universal that the crisis is passed. Commercial activity receives a decided check; credit is shaken; but the episode must point to safer lines of finance, and prove a national educator to the masses.

Our education is yet singularly defective in what pertains to national ethics; and the public in its actions shows either gross ignorance of principles or indifference to its duties, and seldom do two opinions concerning the moral duties of the nation agree.

The failure of our banks casts no stigma upon our bankers, who, as a class, are philanthropic by nature and seek to enhance the nation's prosperity. But defects in the national banking system are clearer to the masses and to bankers as well. Though many are poorer, yet there is no less wealth among us. By means indescribable, yet none the less keenly felt, the savings of the poor dwindle, and the giant fortunes of the country continue to increase in a corresponding ratio. But upon whom rests the blame? We hesitate to indict any class.

The unbiased student must admit, however, be he of whatsoever political party, that the American government no longer has as its chief aim the good of the masses, but, rather, the protection of corporate interests and the advancement of private fortunes receive greater consideration. Neither the "gold bugs" nor the "silver kings," in seeking to establish monometallism or bimetallism, are advocates from disinterested standpoints. The public press seldom finds occasion to use the word principle, except when policy would do as well, and more correctly express the issue at stake.

But the pessimist should have no place in society; we should rather look forward to better things, and aim to exert our influence in the direction of improvement. The present crisis and concurrent evils will work their own relief and lead to greater prosperity and good to the human race.

We have to thank our cotemporaries who have, with scarcely an exception, retained us on their exchange lists. We aim to preserve not only complete files of scientific journals, but local newspapers as well, particularly those of Southern California.

The West American Scientist. Established 1884.
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G. A. R. NOTICE.

We take this opportunity of informing our subscribers that the new Commissioner of Pensions has been appointed. He is an old soldier, and we believe that soldiers and their heirs will receive justice at his hands. We do not anticipate that there will be any radical changes in the administration of pension affairs under the new regime.

We would advise, however, that U. S. soldiers, sailors, and their heirs, take steps to make application at once, if they have not already done so, in order to secure the benefit of the early filing of their claims in case there should be any future pension legislation. Such legislation is seldom retroactive. Therefore it is of great importance that applications be filed in the Department at the earliest possible date.

If U. S. Soldiers, Sailors, or their Widows, Children, or Parents desire information in regard to pension matters, they should write to The Press Claims Company, at Washington, D. C., and they will prepare and send the necessary application, if they find them entitled under the numerous laws enacted for their benefit.

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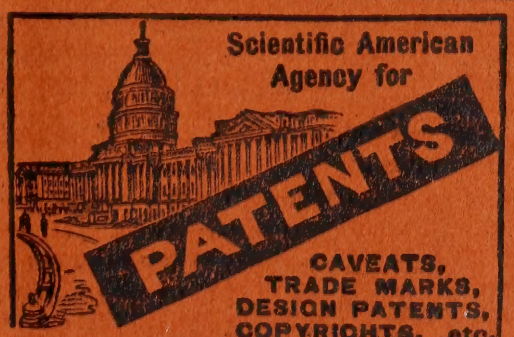

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